



**VASQUEZ BOULEVARD/INTERSTATE 70 SITE
WORKING GROUP MEETING**

FINAL MEETING SUMMARY (rev. 2/26/99)

February 18, 1999

Swansea Recreation Center

2659 East 49th Avenue

Denver, CO

In Attendance:

Working Group

Bob Litle, Asarco Globe Plant
Linda Larson, Heller Ehrman White & McAuliffe(Asarco)
Susan Muza, ATSDR
Celia VanDerLoop, City and County of Denver, Dept. of Environmental Health
Joan Hooker, Clayton Neighborhood
Anthony Thomas, Clayton Neighborhood
Melissa Munoz, Colorado People's Environmental and Economic Network
Michael Maes, Elyria Neighborhood
Chuck Patterson, Globeville Neighborhood
Frances Hartogh, State of Colorado Attorney General's Office
Barbara O'Grady, State of Colorado, Dept. of Public Health and Environment
Jane Mitchell, CDPHE
Lorraine Granado, Swansea Neighborhood and Cross Community Coalition
Bonnie Lavelle, EPA Region 8
Chris Weis, EPA Region 8
Matt Cohn, EPA Region 8

Contact Group

Joyce Tsuji, Exponent (Asarco)
Ted Fellman, EPA Region 8
Wendy Thomi, EPA Region 8
Michael Wenstrom, EPA Region 8
Liz Evans, EPA Region 8
Pat Courtney, EPA Region 8
Marion Galant, CDPHE
Sally Thorsen, CDPHE
Glenn Tucker, ATSDR

Facilitators

Mary Margaret Golten, CDR Associates.
Louise Smart, CDR Associates
Tamara Sadoo, CDR Associates (notetaker)

Agenda Review

Lorraine Granado requested an agenda change, to have the discussion of community issues immediately follow the listing of community issues, early in the meeting. The Working Group agreed to this change.

Review of "Parking Lot Issues" from January 28th.

Bonnie Lavelle addressed the "parking lot issues" from the last meeting:

- 1) *Consider as an exposure pathway the route taken by trash trucks, the Burlington Railroad, I-70 and I-25.*

Bonnie suggested that for the time being this be left as a "parking lot issue," to be discussed during the "risk assessment" portion of the agenda.

- 2) *Not calling before faxing (from T. Riley).*

Bonnie/EPA and CDR will call Toni Riley before sending a fax.

- 3) *1999 Removals for new properties above 450ppm arsenic need to be planned for (assuming a new more comprehensive sampling event takes place in summer '99).*

Bonnie stated that EPA is planning for needed additional removals; EPA will need Federal funding to proceed with the removals; and EPA is willing to apply for that funding. Frances Hartogh added that residential sites south of I-70, east of I-25, west of the South Platte River and north of the railroad, with arsenic levels above 450ppm arsenic levels are being cleaned up by Asarco under state oversight this summer. Commercial properties however will not be done this year.

- 4) *What efforts were made to obtain access from removal properties? (Did community relations staff make attempts or only Pete?)*

Bonnie stated that Peter Stevenson, the on-site coordinator, did all of the coordination in this situation.

- 5) *Communities need information on locations of contamination above background levels but below removal levels.*

Bonnie stated that she would meet separately with any community members regarding this issue to explain the data and how to read it on the sampling results on individual properties.

- 6) *Suggested monthly one-page briefing*

There was further discussion about what type of technical information the Working Group would like to have in the future. Joan Hooker commented that any information for the whole community to use would be helpful. The community members

requested a one-page informational and update summary that they could use in their neighborhoods. EPA agreed to do this.

7) Intensive sampling results

Bonnie said that intensive sampling results would be addressed later in the meeting.

Updates

Bonnie informed the Working Group that EPA planning is underway to commence sampling in the areas that had not been included in Phases One and Two of the study. EPA is looking for cost-effective ways to carry out this new portion of the study. EPA is developing a sampling analysis plan that they will provide to the Working Group for review and comment. They are also talking with possible contractors. The goal is to sample 100% of the study area. About 2400 homes remain to be sampled. Bonnie asked that the community give feedback to the EPA regarding this topic.

Anthony Thomas said that it is very important to the Cole and Clayton neighborhoods that they receive the same treatment as Swansea and Elyria, including door-to-door contact to obtain permission to sample residents' property. He said that under Executive Order 12898, the EPA has an obligation to treat each neighborhood in the way it treats others.

Bonnie Lavelle told the Working Group that EPA's standard practice is to ask for access by written letter, which was done for Cole and Clayton during Phase I and II. EPA may need to proceed differently in this next phase. She said that EPA will conduct door-to-door contact if the community representatives and the new Coalition decide that this will be the best way to contact the community.

A community Coalition of four neighborhoods (Cole, Clayton, Elyria and Swansea) has been formed. (Chuck Patterson asked about Globeville's participation in the Coalition. Lorraine Granado said that Globeville was welcome to join the Coalition and would be notified of meetings.)

Bonnie reported that ATSDR requested Phase One and Phase Two data from EPA in electronic form. EPA has provided this to ATSDR and will make this electronic data available to anyone who requests it.

Review, Modification and Approval of the January 28th Meeting Summary

A suggestion was made by Louise Smart to postpone discussion of the January 28 Meeting Summary until the March 4 meeting, since Working Group members received this draft only recently. She asked the Working Group to contact Mary Margaret Golten or her with any corrections. CDR will send a marked-up revised draft to Working Group members to consider before the March 4 meeting.

Community members raised a number of concerns about the Meeting Summaries in general and the January 28 Meeting Summary in particular:

1. Anthony Thomas and Joan Hooker were concerned that community members' names were omitted from the Meeting Summaries—especially where they had made specific comments or objections or where they raised issues to be considered. Anthony felt that the absence of community members' names gives the impression that community members did not participate. From his standpoint, the use of EPA names but not community members' names is counter to principles of environmental justice. The community members have felt that the facilitators' recording of the meeting process has not been balanced and that community members have been left out of the process. The omission of their names reinforces this concern.
2. Lorraine Granado said that the Meeting Summaries should clearly reflect where there are differences of opinion and differences of goals. She said that disagreement is fine, so long as we are respectful.
3. Michael Maes asked if the facilitators, who are paid by EPA, are working only on behalf of EPA? Louise Smart replied that CDR's role is to work for and to be responsible to the entire Working Group. Community members pointed out that the Meeting Summaries need to reflect the Working Group's role and not be biased toward the EPA. Louise Smart and Mary Margaret Golten acknowledged that they had not realized the importance to the community members of having their comments specifically attributed to them, by name. They said that in the future they would be particularly attentive to citing Working Group members' by name when they make comments.
4. Anthony Thomas said that the Meeting Summary did not accurately reflect the discussion the Working Group had regarding the role of Working Group members. There had been agreement that, although the community members are not "officially designated representatives," they do represent their neighborhoods, they do serve as liaison with their neighborhoods, and they are working to keep their neighborhoods informed. This is an important role for the community members, and the January 28 Meeting Summary needs to include language that explains this role.
5. Joan Hooker requested that technical terms be written in plain English, to make the Meeting Summary more useful to community members.

These issues were discussed by the Working Group and CDR. The following decisions were made relative to the Meeting Summaries:

1. *In future meeting notes, CDR will refer to Working Group members' by name when they make comments..*
2. *CDR will revise the January 28 Meeting Summary to incorporate the comments already received and include, insofar as possible, Working Group members' names associated with comments in the Meeting Summary. CDR will send a marked-up copy of the January 28 Meeting Summary to Working Group members (and others on the Contact list), with a request that the Working Group contact CDR if they have any other specific changes.*
3. *The facilitators and EPA staff will carefully review future meeting notes to help ensure "plain English" usage.*

Community Issues

1. Community members identified several issues of concern, which were discussed by the Working Group:
2. Anthony Thomas asked to have technical terms and jargon broken into plain English. He suggested that EPA get help from those in EPA who know how to translate technical terms and jargon into language that people outside the agency could understand. Bonnie Lavelle said that she would prepare a page of terms in everyday language. Chris Weis offered to work with the community to conduct on-site training or do anything else that would be helpful to the community in dealing with the technical information. Chuck Patterson suggested that the Coalition apply for a TAG grant to obtain assistance on the technical issues. (Lorraine Granado said that they were already considering this. Mel Munoz and Michael Maes pointed out that the need is for EPA to discuss issues at the level of the community, not to have the community able to discuss issues at EPA's level of expertise.
3. Lorraine Granado stated that Working Group meetings should be held only once a month. Twice-monthly meetings are a burden on the community members. Bonnie Lavelle agreed to this, with the clarification that she and Chris will hold additional meetings for the agencies to review and discuss technical issues. All Working Group members will be notified of these meetings and will be welcome to attend if they wish. *The next Working Group meeting will be March 4, at which time the Working Group will review the schedule for upcoming meetings.*
4. Lorraine Granado questioned the presence of attorneys at the Working Group table. She said that she believed there was an agreement that attorneys were not needed at the Working Group meetings and that attorneys would not sit at the table (with the exception of Matt Cohn, who occasionally is needed to provide legal expertise for EPA). Michael Maes asked the Working Group members what decision they remembered making regarding this issue? Discussion in the Working Group showed that there was confusion about whether or not there was such an agreement. Bob Little explained that Linda Larson serves as a both legal and project advisor to Asarco, and that it is in this capacity that she serves as Asarco's second representative on the Working Group. Frances Hartogh explained that she has been working at the site since 1993 and can bring history to the discussions. She said she was willing to sit away from the table so long as she would be able to speak readily at the meetings. *The Working Group agreed (by consensus) that any Working Group members could bring their attorneys to the meetings, that no attorneys would sit at the table (except for Matt Cohn on certain occasions), and that attorneys who sat away from the table would be available for consultation during the meetings.*
5. Lorraine Granado said that the Working Group has not clarified its decision-making process. Bonnie Lavelle clarified that the Working Group may make procedural

decisions regarding its own operations. The EPA will make decisions regarding the risk assessment. *The Working Group will discuss "decision-making" at the next meeting, including what process to use, what topics are applicable, and how decisions are characterized.*

6. Lorraine Granado raised the concern about the PAX pesticide being identified as the PRP. People in the community have told the community representatives on the Working Group that EPA has told them that PAX is to blame for the arsenic in the community. Lorraine stated that it is the Coalition's position that unless there is significant science that the PAX pesticide is the PRP, then the EPA must name PAX and Asarco simultaneously as PRPs. Bonnie Lavelle explained that the EPA is obligated to investigate every potential source of the contamination. She said that EPA has not named PAX as a PRP and has not told the community that PAX is the PRP. Chris Weis said that part of his job is to pursue the answer regarding the identification of a PRP from a completely objective viewpoint and that EPA is only at the beginning of the investigation. Frances Hartogh explained that under the Consent Decree for the Globe site (the agreement between the State of Colorado and Asarco), Asarco has the right to show why they think they are not responsible for detected contamination within that site's study area. As part of this process, Asarco identified PAX as a possible source of the contamination detected in the residential areas of Globeville. The State hired a scientist from the University of Colorado to evaluate Asarco's position. The scientist said he did not think the source was PAX. EPA is now trying to assess all the information. Ted Fellman said that when people ask him about a PRP, he says that EPA is looking at smelters as well as pesticides. Matt Cohn said that there will continue to be research activity to identify the PRP(s) and that no notice letters have been sent out to date. (A "notice letter" is EPA's official notification to a party whom they believe has some responsibility for contamination.) *EPA agreed that in the community they would clarify that "We do not have an identified source at this point," or "EPA is investigating all possible sources of contamination. These (Asarco and PAX) are two possible sources we are investigating among other potential sources, but we have not yet identified a source."* Anthony Thomas asked what is the possibility that everyone in the same neighborhood used the same weedkiller? Bonnie Lavelle agreed that this is a question that needs to be answered. Chris Weis said that EPA has every intention of conducting a quality-assured analysis of the metals present in the soils to pinpoint the source of contamination.
7. Lorraine Granado said that the Coalition wants to go on record that they are strongly opposed to this site ever being considered as part of the State Consent Decree. She said that the community had rejected the ROD and continues to reject the ROD, "Under no condition do we want to have any part of that ROD and Consent Decree."

Draft Risk Management Objectives

Bonnie Lavelle reviewed and explained the Draft Problem and Risk Management Objectives to the Working Group (see attached). EPA attempted to include comments

from the previous meeting clarifying and modifying the risk objectives in this draft. Bonnie asked the Working Group *to review the objectives very carefully and to give her any comments on them by March 5. She particularly wants the Working Group to look at the exposure pathways to ensure that this list is complete.* Bonnie explained that these objectives are not intended to replace science or to pre-judge the results of the study. Instead they form the basis of a conceptual site model of the study.

Celia VanDerLoop asked for and received clarification that these are EPA's risk management objectives.

Draft Conceptual Site Model

Chris Weis reviewed and explained the Draft Conceptual Site Model. The risk management objectives will form the anatomy of the site conceptual model. If any major changes need to be made to the model, they must be done now. He used the analogy of building a high-rise: the conceptual model is the foundation of the building. It is very difficult to go back and re-design the foundation once you have begun the building. Chris explained that the model begins with the contaminant source and proceeds to the exposed populations. The model describes the possible ways the contamination is released, carried to, and received by people.

Lorraine Granado pointed out that under "indoor dust" there is no inhalation pathway indicated. Chris Weis noted this and stated that he would correct the model. He added that this observation was precisely what is needed in terms of feedback from the community, to ensure that the model is complete.

The Working Group continued to ask questions about pathways, past and current residents/workers, and what exposure populations would be included. Chris Weis responded by saying that EPA needs all of this information from the community and that community members should contact EPA as soon as possible about any topics they believe should be included in the site model. Referring to a comment made by Chuck Patterson on "past residents," Chris explained that, according to the National Contingency Plan, EPA is charged with identifying present and potential future risk. ATSDR is the appropriate agency to deal with past effects.

Lorraine Granado asked about indoor workers at the Globe Plant who may be exposed through inhalation. Chris explained that OSHA regulates the indoor work site. Joyce Tsuji asked about convenience store and commercial office workers. Chris said that these workers can be included in the model. Chris clarified "on-site" as the former property boundaries of historical non-operating smelters. Linda Larson suggested that the terms "on-facility" and "off-facility" might be more useful. Lorraine mentioned that the MRI study done for the State of Colorado in the 1970's, before Asarco razed the stacks, might be of use.

Chris told the Working Group that the Site Conceptual Model needs to reflect what pathways will be addressed, what exposed populations will be addressed, and why. *He asked the Working Group members to talk with their neighbors and colleagues to get input on this draft model and to give comments to EPA about the model.* Chris's phone number is 303-312-6671. However, since Chris is on travel status much of the time,

Bonnie Lavelle said the best way to have input to the model is to give written comments to her.

Site-Related Investigations

Bonnie reviewed the "Site-Related Investigations" activities and their status. These are the studies that support the conceptual site model and identify the data EPA has collected and is planning to collect. She said that EPA is studying the physico-chemical composition of soil on the site, has conducted bio-monitoring studies (of some of the people whose soil has been removed), and is trying to answer the following questions:

- What specific chemicals are present?
- What is the size of the soil particle that is carrying the chemical?
- Does the lead or arsenic get absorbed in the body (bio-accessibility)?
- Are these clues to where the contaminants came from?

Bonnie described intensive soil samplings that were conducted at 8 residents' yards to help identify how arsenic was distributed over the yards. She referred the Working Group to the written plan for this study which describes the objectives in detail. EPA collected samples every 5 feet in each of these selected yards and adjacent yards. EPA took a sample every 2" in a 12" core below the grass. EPA does not yet have the data from this study. EPA will use these samples to determine concentrations within a resident's yard, to see if there are hot spots or consistent patterns in the yard and between the yard and adjacent yard. This analysis may provide clues about where the arsenic came from.

Bonnie said that EPA hopes to provide the results of the soil study to the Working Group on March 4. She then described a separate study that EPA is developing. In this study, EPA will be comparing the soil at the site to soils at the Argo and Omaha Grant facilities and potentially to the Globe facility and will continue to look at bio-accessibility to help identify where the arsenic came from. [Question: What is the relationship between bioaccessibility and the source of the arsenic?] Chuck Patterson suggested that EPA consider the trace element signatures present at these facilities; Chris Weis said EPA would look at this. Chris deferred discussion on trace elements that are toxic to a future discussion on toxicology.

Bonnie described three more studies that EPA will be conducting to meet the identified risk management objective that all evaluations are scientifically sound:

- (1) A bio-availability study to verify the results of the preliminary study on bio-accessibility. This new study will involve animals ("in vivo," meaning in live beings, rather than "in vitro," meaning in a laboratory test-tube or beaker). Joyce Tsuji explained that "in vivo" tests are important because unlike lead, a good match has not been found between the "in vitro" and "in vivo" results for arsenic. This may not be the fault of the "in vitro" test but problems with the design of the previous "in vivo" tests. Nonetheless, EPA does not currently have sufficient confidence in arsenic "in

vitro" results alone for use in risk assessment calculations. The bio-accessibility test was an "in vitro" test.

(2) A characterization of commercial properties. EPA hopes to have a plan for everyone's review by March 18.

(3) A sampling study of the homes that EPA has not yet sampled.

EPA will present a sampling and analysis plan to the Working Group and will ask for comments.

Lorraine Granado asked if analysis would be done of cadmium and zinc, and Bonnie said that this will be done. Lorraine expressed some concern that the sampling of additional yards will be different from the sampling of the 18 time-critical yards, resulting in a comparison of "apples to oranges."

Chris Weis explained that EPA sampled the 18 time-critical properties quickly before the soils were removed. Since these properties were at the upper end of the contamination level, they may not be representative of all the other properties. Therefore, EPA wants to sample every property and collect information that will help them understand the relationship in the average home between indoor dust and contamination in the yard. Lorraine stated that action should not be determined either by the worst case scenario or the best case scenario.

Bio-monitoring Results

Bonnie explained that fifteen people from six homes had their blood tested for lead and their hair and urine tested for arsenic. (It was offered to residents of all 18 homes where there were time-critical removals of soil.) Based on exposure to contamination in yards, this group of people is among the most highly exposed people on the site. EPA also collected indoor dust and measured lead concentrations in paint and in water from these 18 homes and received vegetables from one property. The bio-monitoring study was done to help identify the source of contamination and the exposure pathways.

The terms on the bio-monitoring table include:

N = number of samples taken

µg = micrograms (one millionth of a gram; a gram is about the weight of a penny)

L = a liter (a little more than a quart)

dL = a deciliter, which is one tenth of a liter (a little less than ½ cup)

Detection frequency = the number of people who were found to have the chemical in their systems

Chris noted that the maximum level of lead in blood was 4 µg/dL. The Center for Disease Control says that when this number reaches 10 in children, certain steps should be taken. The average level of 2.2 that was found in the fifteen people tested is considered to be normal in the United States. No urinary arsenic was detected in any of the individuals in the clinical laboratories. (Research laboratories have an ability to

detect lower levels of arsenic.) Hair arsenic is measured in terms of micrograms per gram of hair. Levels exceeding one microgram per gram are considered to be out of the ordinary in the United States. The maximum detected within the fifteen people tested was 0.41 micrograms per gram. It is not possible to tell whether the arsenic came from inside the body or was deposited on the outside of hair. (Please see attached table summarizing bio-monitoring results.)

Anthony Thomas asked whether the analysis will take into account the differences between people who stay at home (elderly people, homemakers, young children) and those who leave the home to go to work. Chris Weis said that this would be included in the risk assessment. Anthony asked whether the EPA would take skin and sub-skin samples. Chris said that EPA will not be taking tissue samples from skin. Because of the way arsenic travels in the body, urine and hair samples are good indicators of exposure to arsenic and are easy to take as samples. Although our body excretes most of the arsenic that comes into it, the arsenic can do damage before it leaves the body. Chris explained that we do not know what the presence of arsenic in urine or hair means in terms of health effects. We just know what is above the normal level of arsenic that is found in people. We do know that there are health effects for certain levels of lead.

Joan Hooker told the Working Group about a newspaper article that said that black men have a 10% shorter life expectancy than white men. She asked whether this could be because more black men work outdoors? Chris Weis said he was unable to answer this.

After completion of the Risk Management Objectives and the Site Conceptual Model, the next steps are:

- a. The exposure assessment (e.g., How much soil does a child ingest? How much water does a person drink in a home? How many days in a year are people exposed?)
- b. The toxicity assessment
- c. The risk characterization, which pulls all the data and analyses together

Summary of EPA's Responses to Comments From the State, Denver and ATSDR on EPA's "Draft Data Report for the Vasquez Blvd/I-70 Residential Soils Supplemental Investigation, Physico-Chemical Characterizations of Soils"

Bonnie Lavelle offered to set up a conference call if anyone wanted further discussion on the comments. No one requested this.

Public Involvement Plans

Susan Muza reviewed ATSDR's "Suggested Public Health Assessment Activities Time Line for Vasquez Blvd/I-70 Site, Denver, CO" and told the Working Group that this will remain a draft until the project is finished. The activities and time line can be changed if needed.

Susan stated that ATSDR met with community members and recorded their health concerns related to the site. These concerns are now reflected in the ATSDR time line. ATSDR also attempted to distinguish its responsibilities from EPA's, since there are a few objectives that are better addressed by ATSDR. Chuck Patterson expressed his hope that ATSDR would use the data that has been collected at the Globeville site. Susan Muza reported that ATSDR has added a physician to their Atlanta team to help advise them on whether it is possible to do a study on each form of disease listed on the time line. ATSDR gives grants to state health departments for such activities as health education. Theresa NeSmith of ATSDR and Sally Thorsen and Julia Korndorfer of CDPHE will be working together to determine which health education activities are appropriate and who will actually conduct the work. ATSDR's final timeline will be ready in the spring. *ATSDR would like the Working Group to provide comments on this timeline by contacting Susan Muza.*

Joan Mitchell reported that the CDPHE has a health registry, which may provide useful data.

Joan Hooker said she likes ATSDR's worksheet, including the format and the questions and the appearance of a program that is solution-oriented.

Wendy Thomi stated that EPA is continuing community interviews and hopes to finish by mid-March. The EPA has conducted approximately 25 interviews and would like to do ten more. Wendy noted that she has heard concerns about the interview questions and asked the Working Group to let her know if they or others found the questions offensive. EPA has sent out nearly 3000 pamphlets with basic information about the site to residents and the Working Group. This mailing includes a tear-off portion for people to send in if they don't want to be on the mailing list. If Working Group members know of people, significant areas, or groups who did not receive this mailing, they should let Wendy Thomi or Ted Fellman know. If needed, EPA can go door to door. Celia VanDerLoop suggested that EPA try to reach renters by mailing to "resident" at each property address; she said that this list is available at the Post Office.

Wendy Thomi said that EPA could put notices in the neighborhood newsletter inviting people to call EPA to request that they be added to the mailing list (Cole does not have a newsletter). Ted Fellman said that *they would welcome any suggestions to improve the mailing list*. Wendy told the Working Group that they would like to take advantage of any meetings or newsletters that already occur, such as neighborhood association meetings, in order to provide updates to the community. *She asked the community members to let her know the best way for EPA to be included in community meeting agendas and newsletters, including the appropriate contact person and the deadline.*

Wendy reported that John Ogden is the Technical Assistance Grant coordinator at EPA and is ready to provide information and/or make a presentation to the community about the availability of TAG grants.

Ted Fellman commented that the newly formed Coalition will be very useful, will help the EPA get information to the community members, and will be an effective way for EPA to answer community members' questions and concerns. Anthony Thomas said that the community members of the Working Group formed the Coalition so they could get one consistent set of information from EPA and speak with one voice. Mel Munoz

said that the Coalition will designate one member for communication. In the meantime, information can be sent to her at COPEEN and she will distribute it to the Coalition.

Anthony Thomas pointed out to the Working Group that the maps of the site in the repository are incorrect and do not show the proper test locations. Bonnie Lavelle explained that this is due to uncertainties resulting from the field sampling staffs' use of survey equipment (specifically the equipment called Global Positioning System or GPS). She explained that the sampling results are directly correlated with addresses and offered to meet with community members to go over the maps in order to explain any discrepancies.

Parking Lot Issue

One of the potential removal properties at VBI-170 turned out to be a parking lot, so no removal was conducted. Was there a house or lawn on this property in the past? In other words, could use of an herbicide/pesticide have accounted for the arsenic on this property, or is it clear that this arsenic came from a non-herbicide/pesticide source? Please try to find out whether this property previously contained a house/lawn.

Evaluation of this Working Group Meeting

- Anthony Thomas commented that the meeting went very well, that a lot was settled, that he was pleased that the community members got their concerns heard about the language in the Meeting Summary, and that "we have started understanding."
- Joan Hooker commented that she felt as though she and other community members were now a part of the group.
- Celia VanDerLoop and Susan Muza both felt that the EPA Conceptual Model and information on the investigations was very helpful.
- Barbara O'Grady commented that she would either like the meeting to start on time or at 9:00 am.

The Working Group decided to continue to start at 8:30 a.m., not waiting for everyone to arrive. If members are unable to attend or to arrive on time, they should notify someone else in the group.

Future Dates and Locations

The Working Group's next meeting is on Thursday, March 4th, from 8:30 a.m. to 1:00 p.m. at the EPA Offices, 999 18th Street, 2nd Floor Conference Room, Denver, CO.

Future meetings are scheduled from 8:30 a.m. to 1:00 p.m., unless otherwise noted. (The Working Group will revisit this schedule on March 4, to respond to the suggestion that the Working Group meet only once a month.)

Thursday, March 4 at EPA's Offices (EPA)	Results of Risk-based Sampling.
Thursday, March 18 (SRC)	Exposure Pathway Equations.
Thursday, April 8 (EPA)	Exposure Pathway Equations (cont'd).
Saturday, April 24 (SRC), 9:00 am to Noon	Draft Dose Calculations
Thursday, May 6 (EPA)	Toxicity Values
Thursday, May 27 (SRC), 5:30 p.m. to 8:30	Groundwater Investigation
Thursday, June 10 (EPA)	TBD, based on progress to date

Summary of Update and Action Items from Vasquez/I-70 Working Group meeting of February 18, 1999

EPA:

- Is developing a sampling and analysis plan in order to begin sampling in the areas which were not included in Phases One and Two of the study
- Has Phase One and Phase Two data available in electronic format for anyone who requests it
- Has drafted Risk Management Objectives and a Draft Conceptual Model and is seeking final input on these
- Has completed bio-monitoring for residents at 6 of the 18 removal properties (Results are available.)
- Has completed intensive soil sampling at 8 homes (Data will possibly be available at March 4 meeting.)
- Is completing proposed project plans for a comparison of contaminated soil with potential source area soils (The plan will be available for review at the March 4 meeting.)
- Is assessing the feasibility of testing pigs to study the bio-availability of arsenic
- Is developing a project plan for characterization of commercial properties (The plan will be available for review at the March 18 meeting.)

In addition, the community relations staff of EPA:

- Is continuing community interviews (They have conducted 25 interviews and will do 10 more.)
- Has prepared and sent out approximately 3000 pamphlets with basic information about the site
- Is developing a mailing list
- Is seeking to present information as part of regularly scheduled community meeting agendas and in neighborhood newsletters

ATSDR has developed a draft time line of activities that reflects community members' health concerns related to the site and is seeking input on this time line.

The community representatives on the Working Group have formed a Coalition to provide one voice and to serve as a single, central recipient of information that they will then distribute to Coalition members. The Coalition will identify a person who will serve as their main contact.

Action Items from the February 18 Meeting of the Vasquez/I-70 Working Group

1. CDR will identify Working Group members by name, with their comments and questions, in all future meeting summaries.
2. If Working Group members have additional corrections to the January 28 Revised Meeting Summary or comments/corrections on the February 18 Draft Meeting Summary, they should contact Mary Margaret Golten or Louise Smart at CDR.
3. CDR and EPA staff will see that meeting notes are in plain English as much as possible.
4. EPA will prepare a "plain English" list of terms and definitions prior to technical presentations.
5. Working Group members and their communities, organizations, and agencies should provide comments as follows:
 - a. To EPA (Bonnie Lavelle) on:
 - The Draft Risk Management Objectives, especially the exposure pathways
 - The Draft Conceptual Site Model
 - b. To EPA (Wendy Thomi and Ted Fellman) on:
 - Suggestions for improving the mailing list
 - Suggestions for communicating with the community through already-existing meetings and newsletters
 - Concerns related to interview questions
 - c. To ATSDR (Susan Muza) on:
 - The ATSDR time line of activities

Issues for the March 4 meeting (which will be held 8:30 AM to 1:00 PM at EPA)

1. Future meeting frequencies and dates (The suggestion is to have monthly Working Group meetings with open, technical meetings of the agencies in between.)
2. Review of January 28 and February 18 Meeting Summaries
3. Discussion of Working Group's decision-making process and parameters of decision making
4. Final comments on the Risk Management Objectives and the Conceptual Site Model
5. Results of risk-based sampling if available
6. Other?

VASQUEZ BLVD. AND I-70 SITE

Draft Problem Definition and Risk Management Objectives

Purpose of This Document

This document is intended to define the problem of potential concern at the Vasquez Blvd. and I-70 (VBI70) site in Denver, Colorado, and to identify risk management objectives that have been developed to guide the risk assessment being conducted by EPA for the site.

Problem Definition

The problem of potential concern at this site is contamination of environmental media (soil, groundwater, surface water) with chemicals (metals) associated with current and former activities at three smelters (Globe, Omaha and Grant, Argo) which operated in the area of the site. This environmental contamination is of concern because of the possibility that past, current, or future exposure might be causing adverse health effects in exposed humans and/or in ecological receptors.

Risk Management Objectives

Risk management objectives are qualitative statements of purpose that are intended to help focus the efforts of the remedial investigation and risk assessment so that issues of concern to the risk managers and the citizens are properly investigated and evaluated. The risk management objectives identify the key questions which the risk manager feels should be investigated. The risk management objectives are not intended to replace scientific judgement in the remedial investigation or risk assessment, nor are they intended to prejudge the outcome of these studies, but to provide a frame of reference for judging which areas of investigation and analysis are of greatest importance and relevance to the risk manager and the community.

The draft objectives at this site have been developed by risk managers for the site, taking the input of concerned parties into account in a working group forum. These objectives are based on the current conceptual model for the site, which is shown in Figure 1. This site model summarizes what is currently understood about how humans in the area may be exposed to smelter-related contaminants. This conceptual model and the risk management objectives may be refined and improved as more information becomes available at the site regarding the nature and extent of contamination, and the magnitude of the potential human health risk posed by the contamination.

VASQUEZ BLVD. AND I-70 SITE

Draft Risk Management Objectives

General

1. Ensure the protection of human health and the environment from contaminants associated with current and former smelters located in the vicinity of the site.
2. Assure that all evaluations and all decisions are scientifically sound and are based on the best available scientific information.
3. Assure that state-of-the-art QA/QC and methods are used for all activities related to the site investigation, the risk assessment, and any appropriate remedial actions.
4. Assure decisions and processes are consistent with:
 - EPA regulations, guidance, and policy, including environmental justice. EPA will document their specific efforts to treat this site as an environmental justice site.
 - State regulations, guidance, and policy.
 - Local regulations, guidance, and policy.
5. Assure that ATSDR is fully involved throughout the process. Assure agreement between ATSDR, EPA, and CDPHE on risk assessment methods, to the greatest extent possible.

Remedial Investigation Objectives

Collect sufficient information and data to properly characterize the nature and extent of smelter-related contamination at residential and commercial properties at the site.

Human Health Risk Assessment Objectives

Provide area residents with information on the potential adverse effects (both cancer and non-cancer) of excess exposure to arsenic, cadmium, lead and zinc. This information should be written in language understandable by average citizens, and should be available in both English and Spanish.

Identify locations within the site boundaries that have concentrations of arsenic, cadmium, lead, or zinc in soil or related media which result in predicted doses to people that exceed the most appropriate criterion for protection against non-cancer health effects. Relevant criteria for non-cancer effects include EPA's Reference Dose (RfD) and Reference Concentration (RfC) values,

and ATSDR's Minimal Risk Levels (MRLs)¹.

Clean up all property (inside and outside) to meet ATSDR's minimal risk levels (MRLs) for arsenic, cadmium, lead, and zinc².

Estimate the cumulative cancer risk to area residents from cadmium, arsenic, lead, and zinc in site soils and related media. Identify locations that are predicted to fall within or exceed EPA's reference range for excess cancer risk. This reference range is from one in a million (1E-06) to one in ten thousand (1E-04).

Collect data to help determine if predicted exposures and risks to exposed populations (residents, visitors, workers) are accurate and realistic. This could include a variety of studies such as:

- Biomonitoring for exposure to lead and arsenic
- Epidemiological studies to evaluate whether the incidence of any adverse effects expected to be associated with exposure to site-related chemicals (e.g., cancer, developmental effects, asthma, kidney disease) is higher in the study area than in other comparable areas. (Note: such studies would be the responsibility of ATSDR).
- Studies on the chemical and physical nature of the contaminants, and the rate and extent of the absorption by humans.

Evaluate soil exposure pathways, including both indoors and outdoors, and both direct and indirect routes. Pathways to consider include:

- Pets bringing in dirt from outside (there is a large percentage of pets in the area)
- Direct contact with soil in crawl spaces
- Dust from the crawl space being re-circulated through the heating system
- Inhalation of dust from traffic
- Exposures of children (going barefoot, direct contact with soil, etc.) in empty lots, along railroad tracks, unpaved alleys, old buildings, yards, etc.; collect information from area residents to identify places where children play
- Lots and dirt roads owned by Union Pacific Railroad
- Ingestion of home-grown produce grown in contaminated soil (98% of residents in Clayton and Cole have gardens or fruit trees; 30-40% in Swansea/Elyria)

¹ Note: for arsenic and zinc, ATSDR oral MRL values and EPA oral RfD values are the same. For cadmium, the values are very similar. For lead, EPA has not established an oral RfD and ATSDR has not established an oral MRL.

² This objective is included at the request of a community representative. EPA notes that the final selection of an appropriate clean up level is made when a remedy is selected based on the criteria established in the National Contingency Plan.

- Potential exposures near the Old Finance Center at 38th and York; there is a lot of illness in that area
- Construction site by the Coliseum (near site of old Omaha-Grant Smelter); may be turning over contaminated dirt. There is a lot of construction in the area which tends to bring contamination from below the surface to the surface
- Potential exposure to commercial/industrial workers, utility workers, etc., who would have direct and extensive contact with soils through excavation activities.

Determine if groundwater and surface water meets applicable standards.

Assure protection of sensitive groups (children, seniors). This includes children in daycare centers and children staying with extended families.

Consider and characterize cumulative risks from E.J. sources (e.g., mobile sources, current industry, night-time odors)

Ecological Risk Assessment Objectives

Assure sustainable ecology in aquatic and riparian systems on site.

Remedial Action Considerations

Break any soil exposure pathways that pose unacceptable risk

Prevent usage of contaminated groundwater, and remediate, to the extent feasible, groundwater that is above appropriate guidelines or standards.

Perform investigations and risk assessments prior to changes in zoning or permitting new industry.

Clean up activities will minimize potential for re-contamination. All non-residential property (including alleys and street and road construction or traffic dust) that contain unacceptable levels of contamination will be cleaned such that no adverse health effects occur as a result of the cleanup.

Work toward full understanding of and agreement on the Feasibility Study, by assuring that it meets all of our needs.

Identify individuals who may need health intervention associated with exposure to environmental contaminants (prior to, during, and after clean up).

For any chemicals that are left in place following the completion of the RI/FS and remedial action, ensure that adequate protective and enforceable institutional controls are in place, as appropriate.

Suggested Time Line of ATSDR Public Health Assessment Activities for the VBI70 Site, Denver, Colorado

February 16, 1999

Fall 1998	Conduct initial contact with community and agencies
Winter 1999	Conduct health education activity to explain ATSDR activities and joint ATSDR and CDPHE activities
Winter 1999	Gather community concerns (joint exercise with health education)
Spring 1999	Draft ATSDR plan for the VBI70 Site
Spring 1999	Release ATSDR health consultation on growing fruits and vegetables in affected neighborhoods
Spring 1999	Draft fact sheets or develop other materials to provide information requested by the community (such as: how to reduce exposure to contaminated soil, definitions of environmental and health terms, etc.)
Summer 1999	Conduct joint evaluation of soil data by agencies and community representatives
from objectives ==>	– investigate relationship between asthma and kidney disease (and other diseases) to exposure to site-related chemicals (cadmium, lead, arsenic, and zinc)
from objectives ==>	– consider risk from other sources (mobile sources, current industry, night-time odors)
from objectives ==>	– assure protection of sensitive groups (children, seniors)
Summer 1999	Release ATSDR health consultation on soil data and human exposure from ingestion of soil
Summer 1999	Availability or poster session for the community shortly after release of soil health consultation. Educational activities.

Summer 1999

Decide if ATSDR or CDPHE will conduct the following activities for people living within the boundaries of the VBI70 site:

from objectives ==>

- an analysis of cancer incidence/prevalence (including leukemia)
- an analysis of incidence/prevalence of lung, nose, and throat problems (including respiratory conditions such as rhinitis and sinusitis)
- an analysis of incidence/prevalence of skin problems
- an analysis of incidence/prevalence of children with remedial or special education problems
- an analysis of the incidence/prevalence of people with headache
- an analysis of the incidence/prevalence of people with thyroid disease
- an analysis of the incidence/prevalence of people with kidney disease
- an analysis of the incidence/prevalence of people with gastrointestinal problems (including nausea and diarrhea)

Summer 1999

Decide if health intervention activities are appropriate (from objectives)

January 19, 2000

Release of draft public health assessment

Summer 2000

Release reports on any analysis conducted by ATSDR and CDPHE decided upon in summer 1999

Summer 2000

Conduct availability or poster session for community shortly after release of reports